

CLAIMS:

1. A fuel cell for use with a combustion tool, comprising:

a housing defining an open end enclosed by a closure;

a main valve stem having an outlet, disposed in operational relationship to said open end and reciprocating relative to said housing at least between a closed position

5 wherein said stem is relatively extended, and an open position wherein said stem is relatively retracted;

a fuel metering valve located within said housing, associated with said main valve stem, including a fuel metering chamber disposed in close proximity to said closure and configured so that when said stem is in said open position, only a measured amount

10 of fuel is dispensed through said outlet; and

said housing includes a separate fuel container, and said fuel metering valve includes a valve body has a second end opposite said fuel metering chamber located within said container.

2. The fuel cell of claim 1 wherein said main valve stem has a radially enlarged portion, and said fuel metering chamber is provided with a lip seal constructed and arranged to engage said enlarged portion in said open position, but defining a fuel passage therebetween in said closed position.

3. The fuel cell of claim 1 wherein a first end of said valve body engages said closure.

4. The fuel cell of claim 1 wherein said fuel metering chamber is provided in two components, one of which having a seal for engaging said main valve stem.

5. The fuel cell of claim 1 further including a clamp ring for sandwiching a portion of said container between said valve body and said clamp ring.

6. The fuel cell of claim 1 wherein said fuel metering valve includes a main seal, and said main valve stem includes a radial projection for engaging said main seal.

7. The fuel cell of claim 6 further including a biasing element for urging said stem to said closed position, wherein said radial projection is urged against said main seal.

8. The fuel cell of claim 7 wherein said metering valve includes a valve body, said biasing element is located between said fuel metering chamber and a second, opposite end of said valve body.

9. The fuel cell of claim 1 wherein said fuel metering chamber surrounds said main valve stem and includes a first end engaging a main seal and a second end sealingly engaging an enlarged diameter portion of said main valve stem in said open position, and defining a fuel permeable separation from a main diameter of said
5 main valve stem in said closed position.

10. The fuel cell of claim 9 wherein said fuel metering chamber is defined in part by a chamber body having a radially inwardly projecting lip seal for wipingly engaging said reciprocating valve stem.

11. The fuel cell of claim 1 wherein said main valve stem and said fuel metering chamber are configured for movement of said main valve stem to a container filling position whereby said stem is retracted further than in said open position, and a fluid passageway is defined from said outlet to a container located within said housing.

12. The fuel cell of claim 11 wherein the said main valve stem changes position relative to said fuel metering chamber in said open, closed and container filling positions.

13. The fuel cell of claim 12 wherein said main valve stem has a radially enlarged portion, and said fuel metering chamber is provided with a lip seal constructed and arranged to engage said enlarged portion in said open position, but defining a fuel passage therebetween in said closed and said container filling positions.

14. The fuel cell of claim 11 wherein a second end of a main valve body enclosing said fuel metering chamber is provided with at least one slot configured for facilitating, in said container filling position, fluid communication between a region adjacent said main valve stem into an interior of said fuel cell.

15. A fuel cell for use with a combustion tool, comprising:

a housing defining an open end enclosed by a closure;

a main valve stem having an outlet, disposed in operational relationship to said open end and reciprocable relative to said housing at least between a closed position

5 wherein said stem is relatively extended, an open position wherein said stem is relatively

retracted and a container filling position wherein said stem is retracted further than in said open position to allow filling of a container within said housing through said outlet.

16. The fuel cell of claim 15 further including a fuel metering valve located within said housing, associated with said main valve stem, including a fuel metering chamber disposed in close proximity to said closure and configured so that when said stem is in said open position, only a measured amount of fuel is dispensed
5 through said outlet.

17. The fuel cell of claim 16 wherein said main valve stem has a generally radially enlarged portion, and said fuel metering chamber is provided with a lip seal constructed and arranged to engage said enlarged portion in said open position, but defining a fuel passage therebetween in said closed and said container filling positions.

18. The fuel cell of claim 16 wherein a second end of a main valve body enclosing said fuel metering chamber is provided with a plurality of slots configured for facilitating, in said container filling position, fluid communication between a region adjacent said main valve stem into an interior of said fuel cell.

19. A combined fuel cell and combustion tool, comprising:

a combustion tool configured for receiving a fuel cell;

a fuel cell housing defining an open end enclosed by a closure;

a main valve stem having an outlet, disposed in operational relationship to

5 said open end and reciprocable relative to said housing at least between a closed position wherein said stem is relatively extended, and an open position wherein said stem is relatively retracted; and

a fuel metering valve located within said fuel cell housing, associated with

said main valve stem, including a fuel metering chamber disposed in close proximity to

10 said closure and configured so that when said stem is in said open position, only a measured amount of fuel is dispensed through said outlet.

20. The combination of claim 19 wherein said housing includes a

separate fuel container, and said fuel metering valve includes a valve body having a

second end opposite said fuel metering chamber located within said container.